

ABSTRACT

In a conventional CMOS image sensor, an A/D converter for performing A/D conversion at high-speed arranges the A/D converter elements in columns so as to operate in parallel, and has low resolution in the order of 9 or so bits. The present invention provides an A/D converter for an image sensor, which performs a part of the A/D conversion functions by using a noise cancellation circuit in columns and performs amplification simultaneously with this, thereby obtaining a high signal noise ratio (SNR) and implementing an A/D converter with a high resolution along with the A/D conversion section in a subsequent stage.